OIPE
JUN 16 2005
PATENT & TRADEMARK OFFICE

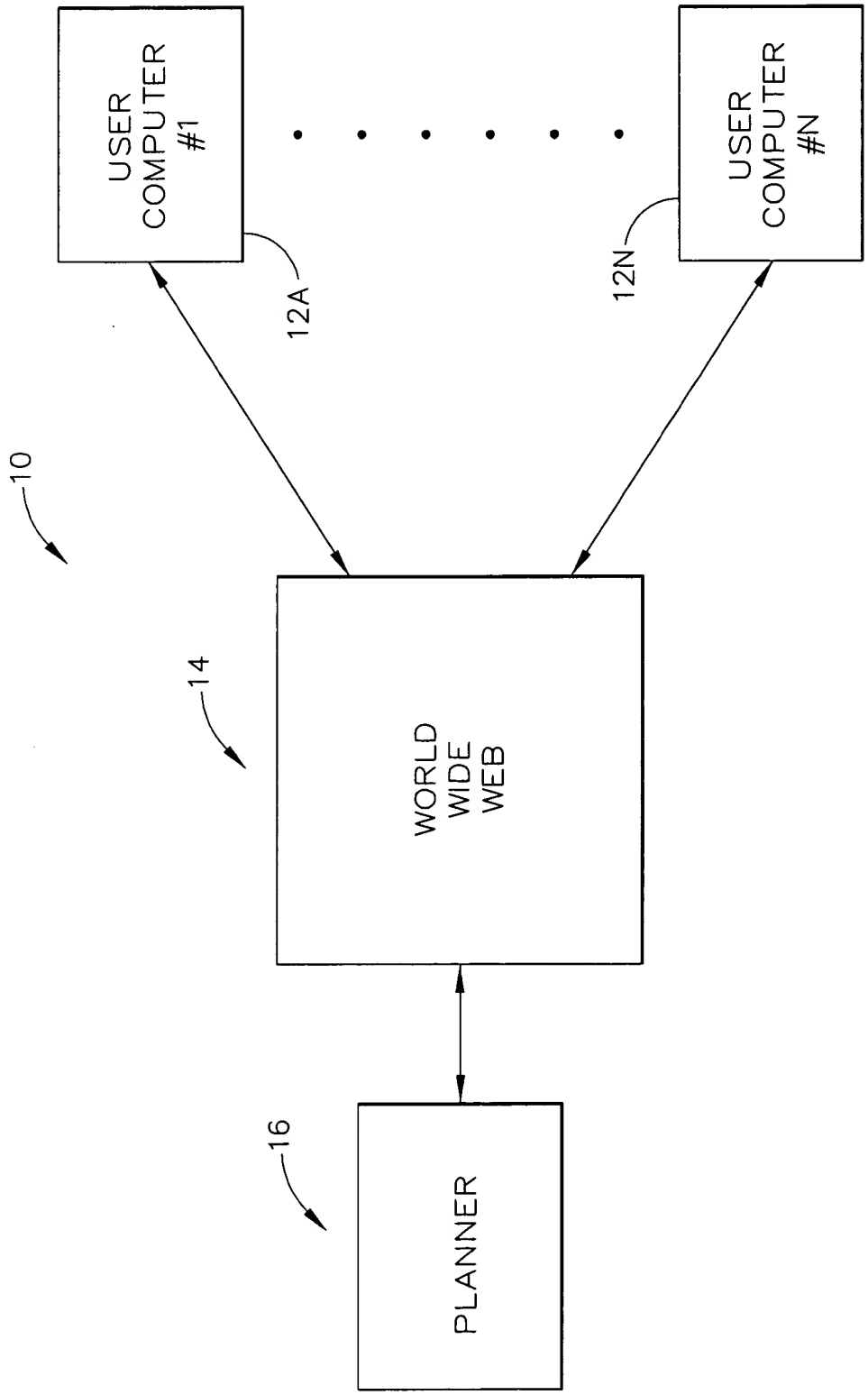

FIG. 1

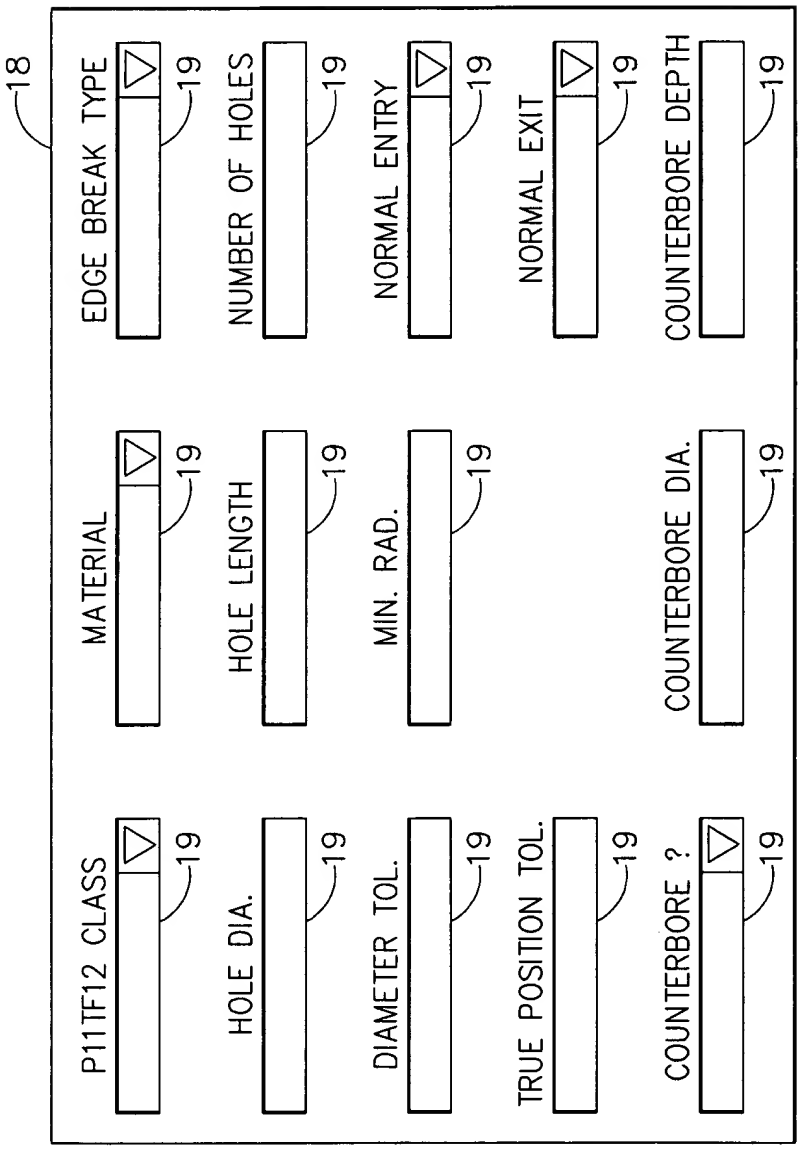
18
EDGE BREAK TYPE
19
NUMBER OF HOLES
19
NORMAL ENTRY
19
NORMAL EXIT
19
COUNTERBORE DEPTH
19
MATERIAL
19
HOLE LENGTH
19
MIN. RAD.
19
COUNTERBORE DIA.
19
P11TF12 CLASS
19
HOLE DIA.
19
DIAMETER TOL.
19
TRUE POSITION TOL.
19
COUNTERBORE ?
19

FIG. 2

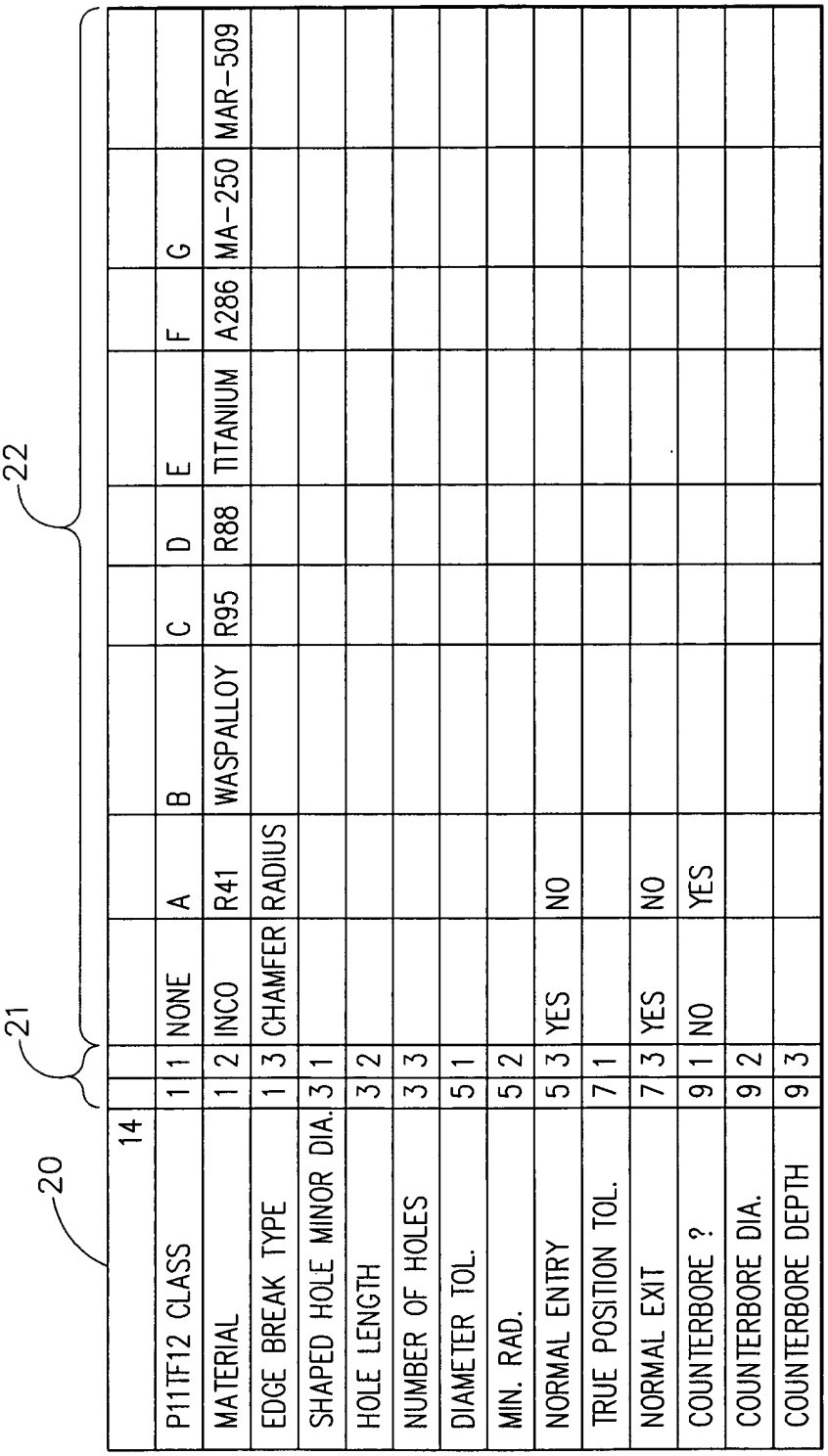
20
21
22
14
P11TF12 CLASS
MATERIAL
EDGE BREAK TYPE
SHAPED HOLE MINOR DIA.
HOLE LENGTH
NUMBER OF HOLES
DIAMETER TOL.
MIN. RAD.
NORMAL ENTRY
TRUE POSITION TOL.
NORMAL EXIT
COUNTERBORE ?
COUNTERBORE DIA.
COUNTERBORE DEPTH
1 1 NONE
1 2 INCO
1 3 CHAMFER
3 1
3 2
3 3
5 1
5 2
5 3 YES
7 1
7 3 YES
9 1 NO
9 2
9 3
A
R41
RADIUS
NO
NO
YES
B
WASPALLOY
C
R95
D
R88
E
TITANIUM
F
A286
G
MA-250
MAR-509

FIG. 3

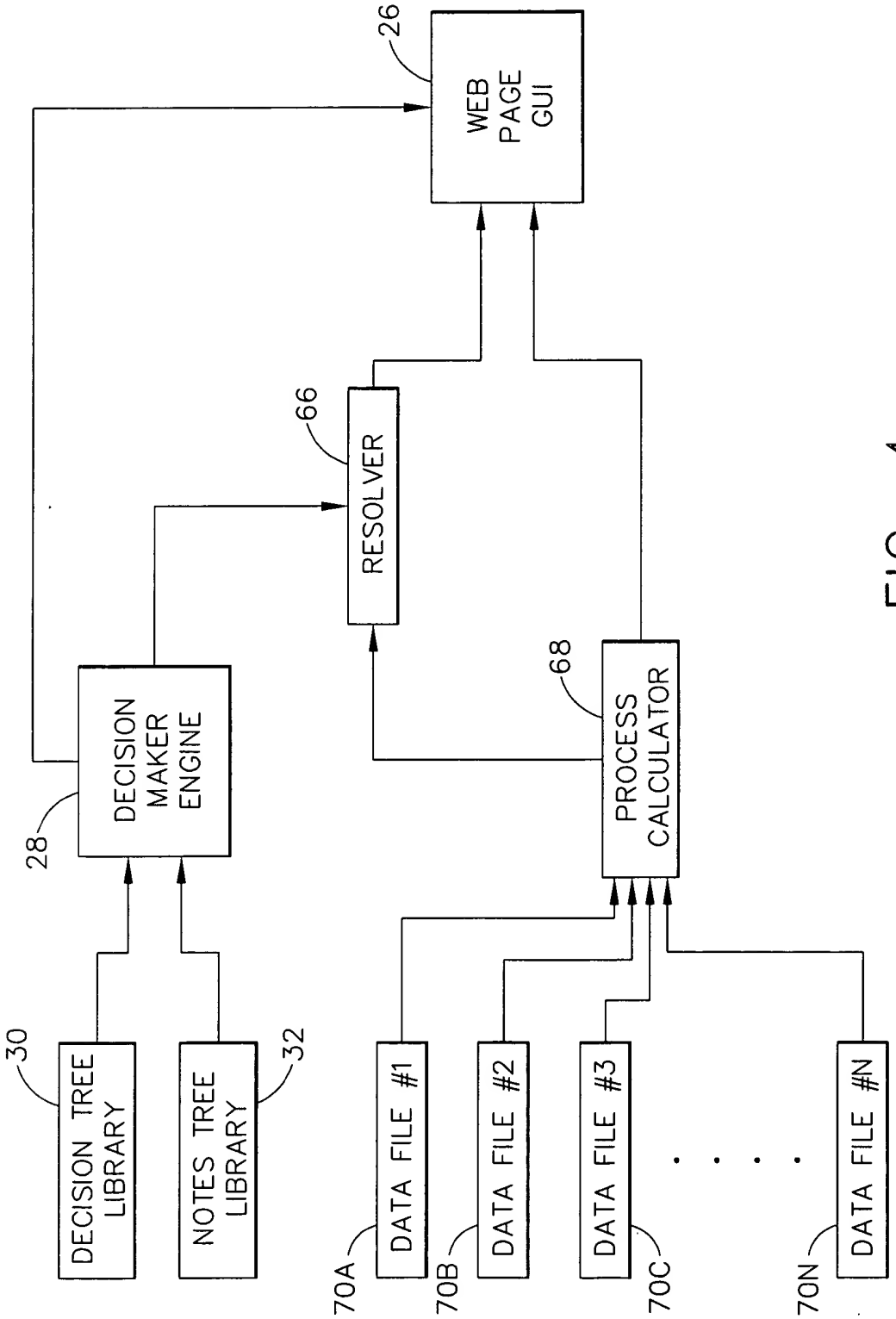
26
WEB PAGE GUI
66
RESOLVER
68
PROCESS CALCULATOR
28
DECISION MAKER ENGINE
30
DECISION TREE LIBRARY
32
NOTES TREE LIBRARY
70A
DATA FILE #1
70B
DATA FILE #2
70C
DATA FILE #3
70N
DATA FILE #N

FIG. 4

NODE INDEX (36)	TYPE (38)	DESCRIPTION (40)	CHARACTERISTIC (42)	OPERATOR (46)	VALUE (44)	NEXT NODE (48)
0	DECISION	?	NORMAL ENTRY	=	NO	1
						4
1	DECISION	?	SHAPED HOLE MINOR DIA.	<	0.52	2
						3
2	STEP	ROUGH ENDMILL				5
3	STEP	ENDMILL FLAT: SIZE=.437				4
4	STEP	ROUGH DRILL: U/SIZE=.012				5
5	STEP	FINISH PERIPHERAL MILL: U/SIZE=.005				6
6	DECISION	?	P11TF12 CLASS	=	D	7
						8
7	STEP	ABRASIVE FLOW POST-FIN: SIZE=.001 MIN				8
8	DECISION	?	COUNTERBORE ?	=	YES	9
						10
9	STEP	COUNTERBORE				10
10	STEP	CHAMFERMILL TOP AND BOTTOM				11
11	STEP	BENCH EDGEBREAK: SIZE=320 GRIT B FLY				999

FIG. 5

50 NODE INDEX	52 TYPE	54 DESCRIPTION	56 CHARACTERISTIC	60 OPERATOR	58 VALUE	62 NEXT NODE
0	NOTE	USE FLOOD COOLANT AT ALL TIMES				999
4	NOTE	USE APPROXIMATELY .050 OVERTRAVEL ON DRILL STROKE	FILEBASE	CONTAINS	THRU	999
5	NOTE	CLIMB MILL WHILE MILLING	PROCESS	CONTAINS	CHAMFER	999
6	NOTE	CLIMB MILL WHILE MILLING	PROCESS	CONTAINS	PERIPHERAL	999
7	NOTE	USE ONE SECTION OF CUTTER FLUTE FOR ROUGHING; ANOTHER FOR FINISHING	PROCESS	CONTAINS	CHAMFER	999
8	NOTE	USE ONE SECTION OF CUTTER FLUTE FOR ROUGHING; ANOTHER FOR FINISHING	PROCESS	CONTAINS	PERIPHERAL	999
9	NOTE	REVERSE FLEXHONE SPINDLE DIRECTION 1/2 WAY THRU HOLE PATTERN	PROCESS	CONTAINS	FLEXHONE	999
10	NOTE	ALTERNATE PACK DRILL CYCLE: 1/2 DIA. DEEP; RETRACT FULLY; THEN 1/10 DIA. DEEP; RETRACT FULLY; REPEAT AS REQ'D	PROCESS	CONTAINS	COOLANT FED DRILL	999
11	NOTE	COOLANT PRESSURE OF 200+ PSI RECOMMENDED FOR CF DRILLING	PROCESS	CONTAINS	COOLANT FED DRILL	999
14	NOTE	ALIGN WORKPIECE & SPINDLE ONLY AFTER RUNNING WARMUP ROUTINE FOR THIS APPLICATION	TRUE POSITION TOL.	<	0.002	999
18	NOTE	WHEN SHAPED HOLE MILLING; ROUGH W/ USED CUTTER; FINISH WITH NEW CUTTER	FILEBASE	CONTAINS	SHAPED	999
19	NOTE	CONSIDER HYDRAULIC TOOLHOLDERS FOR THIS APPLICATION	TRUE POSITION TOL.	<	0.002	999
20	NOTE	ALIGN CUTTER FLUTES W/IN .0002 INCHES BEFORE FINISH PASS	TRUE POSITION TOL.	<	0.001	999

FIG. 6

REPLACEMENT SHEET
PROCESS PLANNING FOR DISTRIBUTED MANUFACTURING AND REPAIR
INVENTOR: CHRISTOPHER R. HARMMOND, et al.
DOCKET: 13DV-13576
ATTY: ROBERT B. REESER, III; PHONE: (314) 621-5070